

# **BIOCHEMICAL AND MOLECULAR IDENTIFICATION OF MYXOBACTERIA FROM CULTURED SEA BASS AND SEA BREAM IN GREECE**

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**Objective.** Marine flexibacteriosis is an important disease for several cultured marine fish. The main causative agent within the Mediterranean waters is considered to be the bacterium *Tenacibaculum maritimum*. Identification of bacteria within the *Cytophaga*-like group, through several biochemical tests are insufficient. However later studies succeeded to locate unique biochemical constituents for many of such bacteria simply by increasing the number of the biochemical tests. The current paper investigates the potential identification of the causative agent of marine flexibacteriosis through unique and specific biochemical trials, and through molecular diagnostic procedures.

**Materials and methods.** Three seasonal samplings were performed on outbreaks of flexibacteriosis on cultured marine species (*Sparus aurata*, *Dicentrarchus labrax*). Fish were taken from farms with outbreaks. The size of the juveniles examined was: 1) 35 sea bream juveniles (2g average weight) 2) 20 sea bass juveniles (2g a.w.) and 3) 20 sea bass juveniles (6g a.w.). Samples were collected from the infected areas and from internal organs, which were examined macro and microscopically (smears-Gram staining). The nutrient substrates used for the cultivation of the pathogens were *Cytophaga* agar, Marine agar, F.M.M. and TSA +2%NaCl. For the biochemical trials

were used the API 20E, API 20NE, API ZYM and API 50CH (Biomerieux) systems, alternatively. Molecular identification was conducted using molecular PCR protocol.

**Results-conclusion.** The observed clinical symptoms were skin erosions in the mouth and tail as well as hemorrhagic gills and grayish areas. Mortality rates were between 5-10% of the total number of fish per tank.

According to PCR results the causative agent of outbreaks seemed to be the bacterium *Tenacibaculum maritimum*. The biochemical trials indicated a homogeneous profile regardless the collection site and the fish species. Conclusively, biochemical trial is a potential identification procedure though molecular identification approaches are more reliable and less time consuming.

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